REMARKS

In response to the final Action of May 12, 2003, the amendment was filed on August 5, 2003. However, in the advisory Action of August 26, 2003, it was deemed that the amendment introduced new issue. The amendment filed on August 5, 2003 was prepared to incorporate claims 22 and 25 into claim 16, wherein the explanation was slightly changed to easily understand claim 16. Since the amendment was deemed to include new issue, the present amendment has been filed, wherein claims 22 and 25 are simply incorporated into claim 16. It is believed that the amendment does not introduce new issue.

In paragraphs 3 and 4 of the final Action, claims 16-19 and 21-28 were rejected under 35 U.S.C. 103(a) as being unpatentable over Oka et al. in view of Glaubitt et al.

In claim 16, an antireflection film is formed of an organic film, a hard coating layer coated on the organic film, a first layer having an index of refraction and coated on the hard coating layer, and a second layer having an index of refraction lower than that of the first layer and coated on the first layer. The first layer is formed of a synthetic resin and metallic oxide particles contained in the synthetic resin. The metallic oxide is at least one selected from the group consisting of ZrO_2, TiO_2, NbO, ITO, ATO, SbO_2, In_2O_3, SnO_2 and ZnO, and the synthetic resin is ultraviolet ray curable resin or electron beam curable resin.

The second layer is formed of a liquid material to be hardened such that after a porous precursory layer for forming the first layer is formed, the liquid material to make the second layer is coated on the precursory layer so that a part of said liquid material to make the second layer enters into pores of said precursory layer, and then the liquid material is hardened. Thus, the first and second layers firmly bond together through the pores.

An index of refraction of the precursory layer for forming the first layer is not greater than 1.64 and the index of refraction of said first layer is not smaller than 1.64. Namely, the precursor layer for forming the first layer has the index of refraction not

greater than 1.64, but since the liquid material for forming the second layer partly enters the pores of the precursor layer, when the first and second layers are established, the first layer has the index of refraction not smaller than 1.64. In the invention, the index of refraction of the first layer changes because of the pores partly filled with the material forming the second layer.

In Oka et al., an antireflection film as shown in Fig. 16 is formed of a transparent substrate film 21, a hard coat layer 23 bonded to the substrate film 21 through an adhesive layer 22, a layer 25 having a high refractive index laminated on the hard coat layer 23, and a layer 24 having a low refractive index. An antireflection film as shown in Fig. 21 has a substrate 31, a resin layer 32, an ultrafine particle layer 34 with high refractive index deposited on the resin layer 32, and an ultrafine particle layer 33 with low refractive index. The ultrafine particle layers 33, 34 are embedded in the resin layer 32. The ultrafine particles having a high refractive index includes ZnO, TiO_2, CeO_2, SnO_2, ITO, and so on. The ultrafine particles having a low refractive index includes LiF, MgF_2, and so on.

In the invention, the first layer formed of the synthetic resin has pores therein, which are very important in the invention. In Oka et al., however, pores are not formed in the resin layers 25 and 32.

In the invention, the second layer deposited on the first layer partly enters the pores of the first layer to be firmly bonded to the first layer through the pores. In Oka et al., the layers deposited on the high refractive index layer are simply laminated the high refractive layers.

Further, in the invention, the first layer is formed from a porous precursory layer having an index of refraction not greater than 1.64, and the first layer has the index of refraction not smaller than 1.64. Namely, the index of refraction of the first layer changes because of the liquid material forming the second layer and entering into the first layer. In Oka et al., since the layers do not have pores, the change of the index of refraction of the layers is not considered at all.

In Glaubitt et al., a highly porous optical antireflection coating is formed by applying a colloidal dispersion derived from

hydrolytically condensing, in the presence of water and a catalyst, one or more silicon compounds of the general formula R_aSiX_{4-a}. The coating also includes colloidally dispersed organic polymers.

In the invention, the first layer is formed of the synthetic resin having pores therein and metallic oxide particles. In Glaubitt et al., although the coating has the pores, the metallic oxide particles are not included in the coating.

In the invention, also, the liquid material forming the second layer partly enters the pores. Thus, the first layer includes the material for forming the second layer filled in the part of the pores, the material of the first layer, metallic oxide particles and the pores not filled with the material. However, the coating in Glaubitt et al. has only pores therein. The first layer of the invention is entirely different from the coating of Glaubitt et al.

In case Oka et al. and Glaubitt et al. are combined, the material used in Glaubitt et al. may be used instead of the layer 25 or 32. Also, the material used in Glaubitt et al. may have ultrafine particles having a high refractive index as disclosed in Oka et al. However, such a combination does not disclose the first layer of the present invention. Namely, in the invention, the second layer partly enters the pores in the first layer, so that the first layer has the material for forming the second layer filled in the part of the pores, the material for the first layer, the metallic oxide particles and the pores not filled with the material. The specific first layer as described herein is not disclosed or obvious from the combination of Oka et al. and Glaubitt et al.

Further, in the invention, due to the above structure, the index of refraction of the first layer is not smaller than 1.64 though the precursory layer of the first layer has the index of refraction not greater than 1.64.

Therefore, even if the cited references are combined, the features of the invention are not obvious from the cited references.

Reconsideration and allowance are earnestly solicited.

A one month extension of time is hereby requested. A check in the amount of $110.00 is attached herewith for the one month extension of time.

Respectfully submitted,

KANESAKA AND TAKEUCHI

by 

Manabu Kanesaka
Reg. No. 31,467
Agent for Applicants

1423 Powhatan Street
Alexandria, VA 22314
(703) 519-9785